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RECENT RECORDS OF RIBBON-FISHES FROM FLORIDA

On March 20, 1920, a perfect specimen of what was undoubtedly *Regalecus* Brunnich was stranded on the beach at Long Key, Manatee County, Florida. It was found by Mrs. Estelle Tillman of Portland, Oregon, who fortunately is a woman of exceptional powers of observation. The fish was found in the water at the edge of the surf, "hardly dead."

Mrs. Tillman recently called at the Bureau of Fisheries, Washington, identified an illustration as being essentially the same as her find, and presented to the Bureau a photograph of the specimen, taken after it had suffered some mutilation. The following description is compiled from Mrs. Tillman's statements and the photograph.

Total length, 7 feet. Depth, about 19, and head about 15 in total length. Eight produced dorsal rays, the longest about 16 inches, with *no connecting membrane* at base; quill-like at base, tapering and becoming flexible toward the tip, with frond-like membrane posteriorly, "like ribbon kelp." The remainder of dorsal composed of soft rays, their length about 2 in depth of body. Anal rays very short. Pectorals wanting (according to Mrs. Tillman, but traces of small pectoral seem to show in the photograph). Ventrals composed of a single ray, 18 inches long, stiff, quill-like, with membrane ¼ to ½ inches wide

on posterior side of ray, and a leaf-like dilation of membrane 3 inches long and 2 inches wide at tip. Eye large, 3½ in depth of body.

Color: Body "lazuli blue, sparkling like diamonds, lighter on under parts." A number of jet black, irregular streaks and splotches on anterior half of body. Produced dorsal rays blotched with bright red, crimson, burnt-orange and blue. Remainder of dorsal white and translucent, "like thin white silk." Ventrals blotched in similar fashion, the dilated tip with a large ocellated spot of dark blue, "like a peacock feather," blending with many colors toward the edges. A band of black, ¼ inch wide, around eye.

The writer has examined the dried dorsal and ventral rays of this specimen and these confirm Mrs. Tillman's description in every particular. Unfortunately, nothing but these fin-rays were preserved.

The second record of a fish belonging to this group was contained in a letter to the Bureau of Fisheries dated April 20, 1920, from Dr. J. Hines Moore of Macon, Ga. With the letter were three very poor snapshots of a fish which Dr. Moore had recently found on the beach, 35 miles south from Palm Beach, Fla. The identity of this specimen is doubtful. It may possibly have been a mutilated *Regalecus*, but many characters would tend to throw it toward the genus *Trachypterus* Gouan. The following data were gleaned from Dr. Moore's letter and photographs:

Total length, 7 feet, 4 inches, body tapering to a point; depth 6 inches; thickness 2½ inches, head 12 to 13 in total length. Dorsal apparently all low, with no produced rays, uniform to and confluent with, the rudimentary caudal. No anal (apparently). Pectoral small, equal to width of eye. Ventrals "fin-like spines," about equal to width of eye. Eye very large, 4 in head, pupil horizontal. Mouth parts and shape of head as in illustrations of *Trachypterus*. No scales. Skin wrinkled and "mottley." "Gills (branchiostegals?) prominent, 2 or 3 to a side.' No color de-

scribed. Further particulars were requested of Dr. Moore, but no reply has been received.

Fish of this group, though seldom taken, are probably not uncommon in the waters about Florida, as several eggs with well developed embryos, and at least one larval example, have been taken in tow-nets by vessels of the Bureau of Fisheries.

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NOTES ON THE RAYS OF CALIFORNIA

Raja inornata Jordan and Gilbert. As a supplement to Dr. Gilbert's[1] interesting account of the development of the spines forming the mediodorsal series in this species, it may be noted that this series of spines is uninterrupted in several postembryonic specimens from the San Francisco market, varying in total length from 145 to 265 mm. In other specimens of the same lot, 175 to 405 mm. long, the series is incomplete, a varying number of spines having become suppressed between the three (2 to 4) differentiated anterior spines and the front of the anterior pelvic lobe.

Raja binoculata Girard. The very young of this species have but a single anterior spine in the mediodorsal series.

A large specimen of ***Raja binoculata*** has been secured by the Scripps Institution for Biological Research at the southernmost record-station for the species—in about fifteen feet of water off the La Jolla Caves, southern California. The most southern previous record-stations are in San Luis, Obispo County.[2]

Raja montereyensis Gilbert.[3] A male specimen of this recently named species, intermediate in size between the one described by Starks and the type, was caught by Mr. Percy Barnhart from the pier of the Scripps Institution for Biological Research, San Diego County, California. It agrees with the published